# 2021

## COMPUTER SCIENCE — GENERAL

**Paper : SEC-A-1**

**(Communication, Computer Network and Internet)**

**Full Marks : 80**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

Answer ***question no.*** **1** and **2** and ***any four*** questions from the rest.

**1.** Answer ***any ten*** questions : 2×10

(a) What is router?

(b) What is network topology?

(c) Define bandwidth of an analog signal.

(d) Differentiate between bit rate and band rate.

(e) What is VSAT?

(f) What is a modem?

(g) What do you mean by composite signal?

(h) What is multiplexing?

(i) What is the main problem of using RZ encoding?

(j) How bit rate of a noisy channel can be obtained?

(k) Differentiate between FDM and WDM.

(l) What is protocol?

(m) What are the advantages of unguided media over guided media?

(n) Define Internet.

(o) What are the advantages of IMAP4 over POP3 in the context of E-mail?

**2.** Write short notes on ***any four*** : 5×4

(a) LAN

(b) Ring topology

(c) Network layer of OSI model

(d) ISDN

(e) Voice and Video conferencing

(f) Internet service providers

**3.** (a) Compare MAN and WAN.

(b) What is attenuation?

(c) Define SNR of a signal. 5+3+2

**4.** (a) Describe functionalities of physical layer and data link layer.

(b) Mention features of mesh topology. 5+5

**5.** (a) Describe functionalities of coaxial and twisted pair cable.

(b) What are the differences between line coding and block coding?

(c) What are the advantages of TDM over FDM? 5+2+3

**6.** (a) Differentiate between Delta Modulation (DM) and Pulse Code Modulation (PCM).

(b) Discuss Manchester encoding with example.

(c) How sampling rate affects performance of PCM? 3+4+3

**7.** (a) Compare FSK and PSK.

(b) Explain the concept of QAM.

(c) What is a Low pass channel? 4+4+2

**8.** (a) Discuss about DNS.

(b) Why IP address is used? Explain briefly.

(c) What is a browser? 5+3+2

**9.** (a) Discuss about architecture of Email.

(b) What are the functionalities of TCP?

(c) Define ADSL. 5+3+2

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